

WHAT IS CLAIMED IS:

1. An optical pickup device, comprising;  
a lead frame package having a sub-mount, a laser source  
mounted on said sub-mount and emitting a laser beam, a reflective element reflecting said beam, a transmission-type refraction grating dividing said beam into a plurality of beams including a main beam and two sub beams which are incident to an optical medium, and a hologram optical element diffracting  
10 the beams reflected from an optical medium, said lead frame package having an opening communicating with an outside of said lead frame package; and

a detecting unit having a substrate and a photo detector mounted on said substrate, said detecting unit being separate  
15 from said lead frame package.

2. The device of claim 1, said detecting unit disposed within said opening of said lead frame package, said detecting unit fixed to said lead frame package after moving to a  
20 position to receive said beams diffracted from said hologram optical element.

3. The device of claim 1, said detecting unit being a chip-on-board photo diode package.

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CnX5*

4. The device of claim 1, said detecting unit being a flip-chip package.

5. The device of claim 1, said reflective element being a mirror.

6. An optical pickup device, comprising:

a lead frame package having a sub-mount, a light source mounted on said sub-mount and emitting a laser beam, a transmission-type diffraction grating element dividing said beam into a main and two sub beams which are incident to an optical medium, and a hologram optical element diffracting said beams reflected from said optical medium, said lead frame package having an opening communicating with an outside of said lead frame package; and

a detecting unit having a substrate and a photo detector mounted on said substrate, said detecting unit being separate from said lead frame package.

20 7. The device of claim 6, said detecting unit disposed within said opening of said lead frame package, said detecting unit fixed to said lead frame package after moving to a position within said opening to receive said beams diffracted from said hologram optical element.

*Sub A3*  
*Claim 5*

8. The device of claim 6, said detecting unit being a chip-on-board photo diode package.

9. The device of claim 6, said detecting unit being a flip-chip package.

10. An optical pickup device, comprising:

a lead frame package having a sub-mount, a light source mounted on a sub-mount and emitting a laser beam, a reflecting element directing said beam onto an optical medium, and a hologram optical element diffracting said beam reflected from said optical medium, said lead frame package having an opening communicating with an outside of said lead frame package; and  
10 a detecting unit having a substrate and a photo detector mounted on said substrate, said detecting unit being separate  
15 from said lead frame package.

11. The device of claim 10, said detecting unit disposed within said opening of said lead frame package, said detecting  
20 unit fixed to said lead frame package after moving to a position within said opening to receive said beams diffracted from said hologram optical element.

12. The device of claim 10, said reflective element being  
25 a reflection-type diffraction grating element dividing said

beam emitted from said light source into a plurality of beams including main and two sub beams reflected toward said optical medium.

*Sub A3  
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13. The device of claim 10, said detecting unit being a chip-on-board photo diode package.

14. The device of claim 10, said detecting unit being a flip-chip package.

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15. The device of claim 10, said reflective element being a mirror.

16. An optical pickup device, comprising:  
15 a lead frame package having a sub-mount, a light source mounted on said sub-mount and emitting a laser beam which is incident to and reflected from an optical medium, and a hologram optical element diffracting said beams reflected from said optical medium, said lead frame package having an opening  
20 communicating with both said hologram optical element and an outside of said lead frame package; and

a detecting unit having a substrate and a photo detector mounted on said substrate, said detecting unit being separate from said lead frame package.

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17. The device of claim 16, said detecting unit disposed within said opening of said lead frame package, said detecting unit fixed to said lead frame package after moving to a position within said opening to receive said beams diffracted from said hologram optical element.

18. The device of claim 16, said detecting unit being a chip-on-board photo diode package.

10 19. The device of claim 16, said detecting unit being a flip-chip package.

15 20. The device of claim 16, said detecting unit moving in a direction parallel or vertical to said lead frame package and rotating about said hologram optical element before fixed to said lead frame package.

21. A process in an optical pickup device, comprising the steps of:

20 providing a lead frame package having a sub-mount, a light source mounted said sub-mount and emitting a laser beam which is incident to and reflected from an optical medium, and a hologram optical element diffracting said beams reflected from said optical medium, said lead frame package having an opening

communicating with both said hologram optical element and an outside of said lead frame package;

providing a detecting unit having a substrate and a photo detector mounted on said substrate, said detecting unit being separate from said lead frame package;

locating said detecting unit within said opening of said lead frame package;

moving said detecting unit with respect to said lead frame package; and

10 fixing said detecting unit to said lead frame package.

22. the process of claim 21, further comprising the steps of:

monitoring a signal obtaining said photo detector during  
15 movement of said detecting unit with respect to said lead frame package; and

fixing said detecting unit to said lead frame package when  
said signal is in a predetermined range.

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